THE ARMY ENTERPRISE PERSONNEL DATABASE

LTC(P) Gregory J. Fritz and Dr. Kenneth L. Bedford

"Army transformation will place increased demands on our human resources systems in terms of speed, accuracy, and accessibility. Also, we need better analytical and predictive tools for recruiting, distributing, and managing our multiskilled soldiers."

LTG John M. Le Moyne
Army Deputy Chief of Staff, G-1

Introduction

Timely, accurate, and authoritative data are essential to the success of the Army's personnel transformation. Currently, Army personnel information resides in dozens of disjointed databases. In the future, Army personnel systems will leverage the power of modern databases and network connectivity to minimize the number of databases and maximize their use.

The Army Human Resources (HR) System requires accurate data from the time a recruiter contacts a potential recruit, through the term of service, to the point a soldier transitions to civilian life and/or retires. This personnel management structure is depicted in Figure 1. The recruiting mission derives from an accurate inventory of soldiers already in service, their skills, and their locations. Likewise, the operational employment of soldiers and logistical

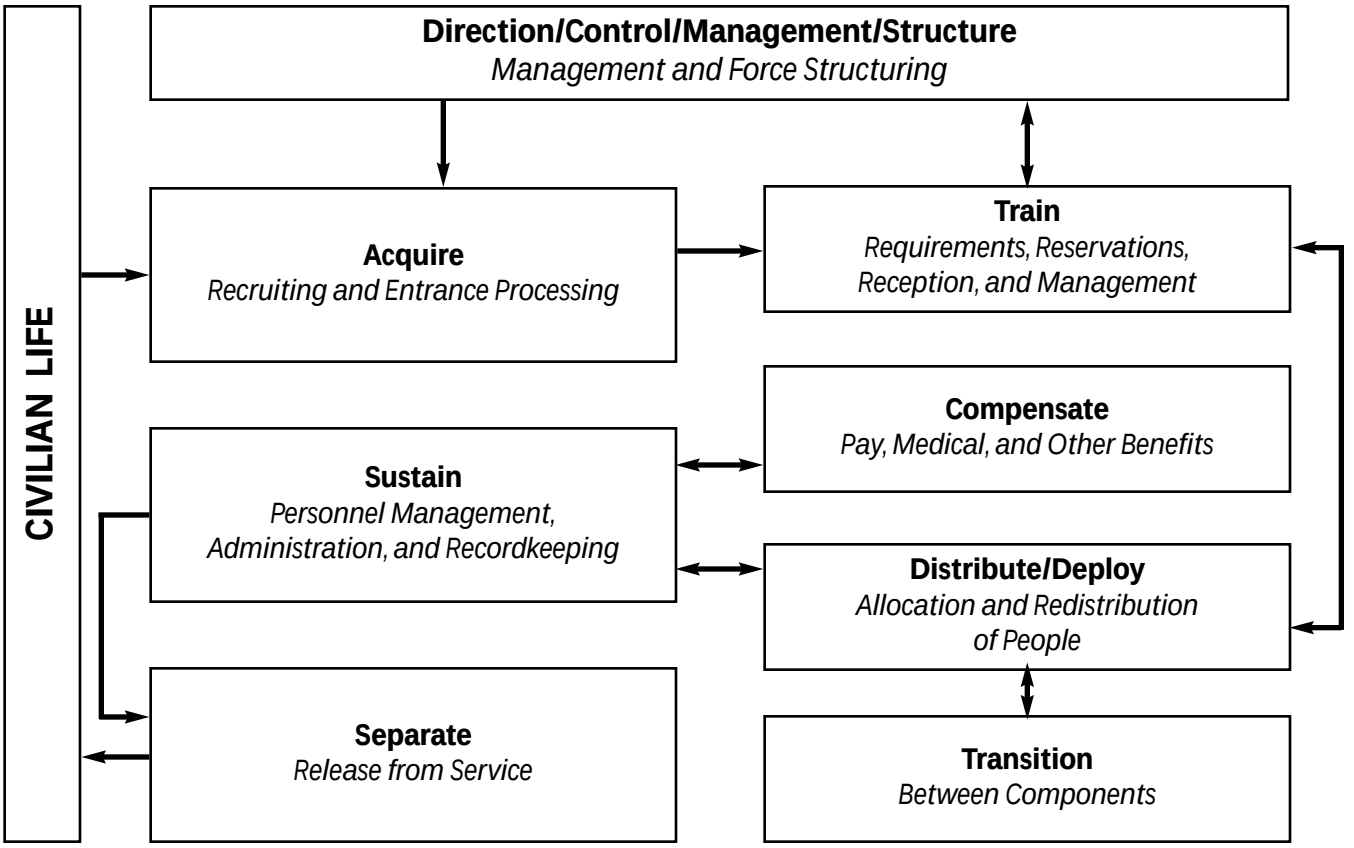

Figure 1.
The soldier life cycle

support of soldiers also relies on accurate data. Further, the administration of soldier benefits also requires timely and accurate data. Thus, it is no exaggeration to emphasize the importance of timely, accurate personnel data throughout the soldier's life cycle and across the spectrum of Army missions and functions.

The cornerstones of Army human resources are the personnel readiness and strength accounting of Army units, yet each supporting system has been developed using installation-level groupings of soldiers. This means that soldiers are recruited, trained, assigned, tracked, and separated with imprecise and outdated information about the needs of Army units. This approach evolved from a decentralized paper-based Army to a decentralized automated Army without fully capitalizing on modern technology. Modern databases, Web technology, and increasing bandwidth enable centralization and data accuracy far greater than the "stovepipe" systems still used throughout the Army. These technologies are essential for transforming to an information age Army.

The transformed Army will employ units assembled from disparate installations and with greater reliance on Reserve components. Personnel transformation will enable better visibility of composite units by implementing a single, unified Army Enterprise Personnel Database that contains data about all soldiers, regardless of component or installation, and is Web-based and accessible by authorized users from anywhere in the world.

The Army Enterprise Personnel Database will exploit legacy and developmental databases to facilitate the Army's migration to the Defense Integrated Military Human Resources System (DIMHRS). Objective Force personnel systems will evolve from the current systems to facilitate soldier self-service and automated workflow for management review and approval to ensure accurate and current data.

Current HR Systems

Today, Army personnel data are spread across hundreds of different systems, each designed for a piece of the soldier's life cycle. These systems support information-processing requirements in specialized areas from recruiting and enlistment to training, separation, and all points in between. Each component—Active, Reserve, and National Guard—has its own systems, specifically designed to meet the differing statutory and regulatory standards for 10 U.S.C., *Armed Forces* (Title 10) and 32 U.S.C., *National Guard* (Title 32) soldiers. Each of these systems has its own databases, where each database holds much of the same data. Attaining consistency across so many databases requires considerable maintenance of the information and its interfaces. Further, attaining consistency consumes considerable time and money as well as the intangible, but sizeable, opportunity cost of data inaccuracies. Current HR system problems include the following:

• There are a large number of personnel databases with limited interoperability. Interfaces are typically batch transactions and result in high error rates. Latency of input by field to "top of the system" and for movement of soldiers between components results in poor visibility in a mobilizing Army. In addition, it is costly to maintain the many system interfaces and to update them when new systems come online or when Congress mandates change.

• There is a need for flexible force structure and unit management data and processes. Processes and structures are "hard-coded." Army transformation and Objective Force realization will drive changes to the force structure and will be dynamic, thus pushing the need for a data-driven model.

• There are problems integrating Reserve components. The transition and mobilization of soldiers often results in soldiers "disappearing" from the databases for weeks or months as they are deleted from the losing component, but not immediately added to the gaining component.

Future Requirements Support

The Army is already scheduled to lead DOD in transitioning to DIMHRS. DIMHRS has chosen PeopleSoft 8, a commercial product offering an Internet architecture that enables universal access to authorized users via a Web browser across low bandwidth networks. Migration to DIMHRS will require radical cultural, organizational, and process changes; will force a change to "position management;" and will require "clean data" from one "authoritative data source," with consistent business rules.

Business process re-engineering is key to Army personnel transformation. Data entry, approval, and other functions must be decoupled from paper forms and local computers. In a Web-based environment, collecting the right data, from the right source, with automated workflow for "point-and-click" approval becomes the new business model. Authoritative data can then be shared across the Army based on need to know, using the principles of a knowledge-based organization. The key element to this path forward is a consolidated Army Enterprise Personnel Database, where these Web-based applications will perform real-time transactions.

Process re-engineering reduces redundant functionality; enables migrating functionality to the Web; enables modularity and flexibility in application implementation to support Army transformation and the Objective Force; and forces cleansing of the Army's personnel data and personnel processes as a stepping stone toward DIMHRS implementation.

Architectural Concept

Converging to a single Army Enterprise Personnel Database and migrating to Web-based functionality are critical enablers of personnel transformation. The database will provide enterprise data visibility to enable applications that support the following:

• Functionality across the entire soldier life cycle;

• Legal requirements (Title 10, Title 32);

• Operational requirements such as future passive accounting of personnel (e.g., biometric check-in/check-out of a unit, a building, or a combat vehicle); and

• Operational requirements of commanders (single, timely, and accurate data source for reports such as strength accounting, in-transit visibility, casualty reporting).

The enterprise database can, and probably should, evolve into the single database for most applications across the Army enterprise. With a single

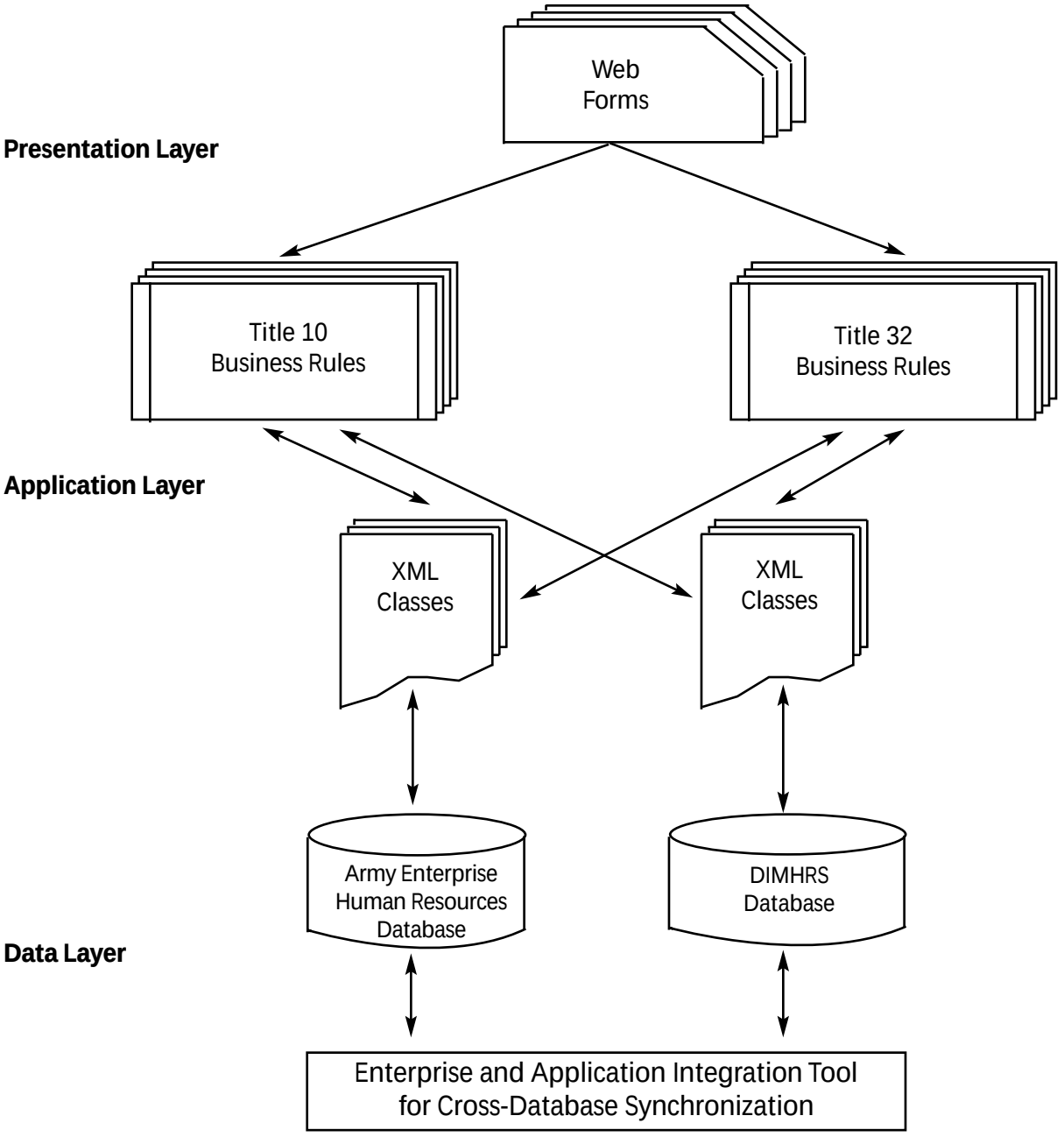

Figure 2.
Three-tiered architecture

database, there is no question of whose data is right because there is only one authoritative source of data. Privileges to read and/or write to specific data elements must be controlled centrally, but the actual application will be modularly decoupled from the database. Thus, one set of forms could call separate sets of business rules and workflow processes to support Title 10 and Title 32 requirements.

Implementation Hurdles

Implementation hurdles are less technical than political or cultural hurdles. While central hosting is a preferred technical option, it raises issues of local ownership of data and processes versus Army ownership. Incorporating decentralized functional definition of the applications to keep the business process close to the functional users will help alleviate those concerns. However, retaining strict control and central management of the data model and interfaces is essential.

Implementation of this approach will use a three-layer model (Figure 2) that is discussed below:

• *Presentation Layer.* A Web-based user interface eliminates the need to deploy code to the desktop or field. The user interface delivers content while providing navigational and interactive features such as Web forms, security

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sign-ons, and reports. Benefits include flexibility, interoperability, and substantially lower operations and maintenance (O&M) costs.

• *Application Layer.* This layer includes business logic, workflow, and access control. Variables used in the application code should be decoupled from the actual database design by using eXtensible Markup Language (XML) to translate the variables to the relational tables. Thus, future changes to the database, or completely switching to a different database (e.g., DIMHRS), will only require updating the XML but not the application code. Benefits include a modular and flexible development environment that reduces rule conflicts that could occur if implementing inside the database and provides better visibility into business rules "as coded," thus leading to a reduced O&M tail.

• *Data Layer.* This layer entails a clean, authoritative data source that is implemented centrally. The data model is driven by business needs and closely adheres to appropriate data standards. This data model could be derived from *ab initio* standards or from a commercial off-the-shelf product (e.g., PeopleSoft 8) implementation. Benefits include improved data integrity and data sharing and substantially lower data management costs.

Conclusion

The Army's migration from the current disjointed, complex state of personnel systems to a simpler future state requires a sound architecture that fits the Army's business environment and anticipates DIMHRS requirements. The essential first step is moving to a centralized Army Enterprise Personnel Database. The benefits of implementing this single database include the following:

• Improved data accuracy, consistency, and timeliness for personnel readiness reporting, strength accounting, and more accurate logistical support;

• Better accounting for movement of soldiers between components;

• Reduced maintenance costs resulting from reducing or eliminating data interfaces;

• Reduced opportunity costs from inaccurate or inconsistent data; and

• Clear migration path to DIMHRS.

Among all the initiatives supporting Army transformation, personnel transformation offers some of the greatest potential benefits for soldiers and their families. Building the Army Enterprise Personnel Database will transform the Army's management and support of its soldiers and enable the Army to leverage Web technology and commercial best practices. Leveraging Web technology will reinforce successes like **http://www.goarmy.com** and **http://www.goarmyreserve.com** and will transform our personnel systems for the Objective Force.

LTC(P) GREGORY J. FRITZ is the Director of the Information Management Office for the Army Deputy Chief of Staff, G-1. He is a graduate of the Army War College and the U.S. Military Academy, holds an M.S. in acquisition management from the Florida Institute of Technology, and is a member of the Army Acquisition Corps.

DR. KENNETH L. BEDFORD is the Technical Director for Knowledge Services, Electronic Data Systems. He is responsible for enterprise knowledge and human resource applications, including the original Army Knowledge Online pilot applications supporting Officer Personnel Management System XXI initiatives. Bedford holds a Ph.D. in physics from the University of Illinois at Urbana-Champaign.